[0086] Subsequently, the controller **160** may detect whether a touch event is detected (**103**). If the controller **160** determines that a touch event is not detected, the controller **160** may retains the activation state of the touch sensor **140**.

[0087] If the controller **160** determines that a touch event is detected at step **103**, the controller **160** may receive a touch signal from the touch sensors **140**, execute a function according to the touch signal, and may activate the flexible sensors (**105**). In some cases, the controller **160** may activate the flexible sensors **150** when the controller **160** activates the touch sensor at step **101**.

[0088] The controller **160** may then determine whether a bend is detected (**107**). If the controller **160** determines that a bend is not detected at step **107**, the controller **160** may retain the activation state of the flexible sensors **150** and may execute a function according to the touch signal. If the controller **160** determines that a bend is detected at step **107**, the controller **160** may receive a bend signal from the flexible sensors **150**, and load a function table from the storage unit **170** (**109**). The function table may be a table that describes functions to be executed according to detected touch events and bend events.

[0089] The controller **160** may execute a function based on the detected touch events and bend events by referring to the function table (**111**). For example, if the controller **160** receives a bend signal corresponding to a corner bending operation, the controller **160** may execute a function related to bending of a corner of the display unit **130**, such as, for example, a folding function, a menu function, a slide view function, and a multi view function. The folding function can be performed in such a way that the controller **160** may apply a folded image to a content being displayed on the display unit **130**, and display the folded image on the display unit **130**. The folding function may refer to a function in which a content property, for example, a bookmark property, is added to the content being displayed on the display unit **130**. In the menu function, the controller **160** may initialize touch sensors **140** in an area where a menu image is displayed, and may activate items therein for being selected. The menu function may allow menu images to be displayed and items in the menu images to be executed. In the slide view function, the controller **160** may initialize the touch sensors **140** in an area of the display unit **130** so that other slides of a currently output content can be output in a certain size on one side of the display unit **130**. Accordingly, the user can select a corresponding slide image. In the multi view function, the controller **160** may initialize the touch sensors **140** so that images corresponding to the other (non-displayed) contents stored in the storage unit **170**, can be displayed on one side of the display unit **130** and a user can activate images in the display unit **130**.

[0090] The controller **160** may determine whether an asymmetrical bend event is detected with respect to the center of the display unit **130**. When the controller **160** determines that an asymmetrical bend event is detected, the controller may execute a page turning function. The page turning function may allow a user to open a plurality of pages. The page turning function can provide display of portions of other (not currently displayed) pages in a block width on one side of the display unit **130**. The width of the block width may be increased or decreased according to the bend angle. When portions of pages are displayed at a certain time interval, the time interval can be adjusted according to the width of the block width. For example, if the width of the block width is increased, the time interval may also increase. By contrast, if the width of the block width is decreased, the time interval may be decreased. If a touch event occurs within the block width, the controller **160** may turn touch event-released pages in a predetermined direction, and may simultaneously display pages that retain the touch event. If the touch event is detected and subsequently released by the user in display areas of a plurality of pages, the controller **160** may remove the touch event-released pages in a certain direction at a certain time interval. If a page has a bookmark, the controller **160** may add an image or mark to the page to differentiate the page from other pages. In some cases, the controller **160** may increase the ratio of a display area within the block width of the page having a bookmark to a display area within the block width of pages without a bookmark. If a touch event occurs and is then released, the controller **160** may display the page having a bookmark for longer than the pages without a bookmark before removing or moving the page in a certain direction. If a page is set by a lock bar, although a bend event may not continue to be detected, the controller **160** can retain the block width. The controller **160** can display a bookmark symbol within the block width so that the user can easily search for the page having the bookmark symbol. When the user touches the bookmark, the controller **160** may control the display unit **130** to immediately display the page having the bookmark symbol.

[0091] The controller **160** may also determine whether bend events have directions differing from one another. For example, if the controller **160** determines that a plurality of bend events have bend directions differing from each other, the controller **160** may enlarge or reduce a size of content displayed in an area that is bent upwards or downwards, respectively, and may simultaneously reduce or enlarge a size of other content displayed in other areas that are bent downward or upward, respectively.

[0092] As shown, the flexible display device **100** and the data displaying method thereof, according to exemplary embodiments of the invention, can display different contents according to the areas and angle of the bend on the display unit **130**. Although the displayed contents are identical to each other, the flexible display device **100** and the data displaying method thereof is can display various contents in different displaying modes so that the user can easily search for and view the contents.

[0093] As described above, the flexible display device **100** and the data displaying method thereof can generate input signals in various modes, and can display data based on the generated input signals.

[0094] It will be apparent to those skilled in the art that various modifications and variations can be made in the present invention without departing from the spirit or scope of the invention. Thus, it is intended that the present invention cover the modifications and variations of this invention provided they come within the scope of the appended claims and their equivalents.

What is claimed is:

1. A flexible display device, comprising:

a touch sensor to detect a touch event;

a flexible sensor to detect a bend event;

a storage unit to store a function table, wherein the function table comprises a command to define function of the device according to the touch event and the bend event;